

The Impact of Generative AI on Critical Thinking: Self-Reported Reductions in Cognitive Effort and Confidence Effects From a Survey of Knowledge Workers

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Abstract

The rise of Generative AI (GenAI) in knowledge workflows raises questions about its impact on critical thinking skills and practices. We survey 319 knowledge workers to investigate 1) when and how they perceive the enactment of critical thinking when using GenAI, and 2) when and why GenAI affects their effort to do so. Participants shared 936 first-hand examples of using GenAI in work tasks. Quantitatively, when considering both task- and user-specific factors, a user's task-specific self-confidence and confidence in GenAI are predictive of whether critical thinking is enacted and the effort of doing so in GenAI-assisted tasks. Specifically, higher confidence in GenAI is associated with less critical thinking, while higher self-confidence is associated with more critical thinking. Qualitatively, GenAI shifts the nature of critical thinking toward information verification, response integration, and task stewardship. Our insights reveal new design challenges and opportunities for developing GenAI tools for knowledge work.